

HARVARD UNIVERSITY

17 Oxford Street  
Cambridge, MA 02138



**Tuesday, May 19, 2020**  
**10:00 a.m.**

**Mathematical Picture Language Seminar**  
**Join by Zoom**

**<https://harvard.zoom.us/j/779283357>**

**“Buildings,  $C^*$ -algebras and new higher-dimensional analogues of the Thompson groups”**

**Alina Vdovina**

University of Newcastle

**Abstract:** We present explicit constructions of infinite families of CW-complexes of arbitrary dimension with buildings as the universal covers. These complexes give rise to new families of  $C^*$ -algebras, classifiable by their K-theory. The underlying building structure allows explicit computation of the K-theory. We will also present new higher-dimensional generalizations of the Thompson groups, which are usually difficult to distinguish, but the K-theory of  $C^*$ -algebras gives new invariants to recognize non-isomorphic groups. We will also discuss new directions of generalizations to higher dimensions of the work of Vaughan Jones and his collaborators on connections of the Thomson's group and Conformal Field Theory.